

KEYNOTE SPEAKERS



Prof. Dr. **Andris Broks**
University of Latvia, Latvia

Title: HUMAN, LIFE, UNIVERSE: HUMAN'S LIFE WITHIN THE UNIVERSE

Dr. Andris Broks is a Professor Emeritus at the Faculty of Physics, Mathematics and Optometry, University of Latvia in Riga. He completed his PhD in the field of solid state physics and he currently works in the field of physics education and teaches across a wide range of general education topics. His principal research interests today are: systems thinking and systemic approach in physics education, the philosophical and psychological basis of Science education. He has been working on Education Law of Latvia as well as participated in education innovation projects at the national and international level. From 2002 he serves as a Deputy Editor-in-Chief of the Journal of Baltic Science Education and is a member of the Editorial Board of the journal „Problems of Education in the 21st Century“.

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Assoc. Prof. Dr. **Paolo Bussotti**
University of Udine, Italy

Title: INTRODUCING THE CONCEPT OF ENERGY: EDUCATIONAL AND CONCEPTUAL CONSIDERATIONS

Dr Bussotti graduated with first-class honours in History of Science and Technology from the Faculty of Humanities (degree course in History) of University of **Pisa** on 25th November, 1991. In July 1996 he received a Ph.D. in Historical Sciences at the University of **San Marino**, with a thesis on the foundations of mathematics, wherein he analysed four authors in particular, namely **Bolzano**, **Cantor**, **Frege** and **Husserl**. In 2005 he was appointed with a Humboldt fellowship at the LMU, Munich.

Currently, Dr. Paolo Bussotti is Assistant Professor in History of Science and Technology, at the DIUM.

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MSc. Ilva Cinite
University of Latvia, Latvia

MSc. Ilva Cinite works at the University of Latvia. Currently, both a lecturer and teaching assistant for several general physics courses, putting into practice elements of the student-centred approach to physics at university. Has many years of experience in physics education and always enjoys new challenges based on research in education and human brain studies of how students learn.

Title: STUDENT-CENTERED EDUCATION IMPLEMENTATION IN UNDERGRADUATE PHYSICS COURSES OF NATURAL SCIENCES AT THE UNIVERSITY OF LATVIA: SUCCESSSES AND CHALLENGES

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Prof. Dr. Ching-Ching Cheng
National Chiayi University, Taiwan

Title: IMPLEMENTING A NATIONAL DATABASE ON YOUNG CHILDREN'S LEARNING: A LONGITUDINAL STUDY TO EVALUATE THE QUALITY OF PRESCHOOLS

Dr. Ching-Ching Cheng is a Professor and Department Head at National Chiayi University in Taiwan. Her main professional interests are curriculum in early childhood education, pre-school teacher education and professional development, application of digital technology in the professional development of teachers.

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Prof. Dr. **Gabriel Gorghiu**
Valahia University Targoviste, Romania

Title: PROMOTING SCIENCE ACTIONS IN NOWADAYS EDUCATION: AN IMPORTANT ISSUE RELATED TO OPEN SCHOOLING

Dr. Gabriel Gorghiu graduated from the Polytechnic University of Bucharest, Faculty of Engineering and Management of Technological Systems, and the Valahia University of Targoviste, Faculty of Sciences and Arts, specialization: Mathematics-Informatics. He has two Master's Degrees: in Project Management and Mathematics-Didactics. He is Professor at Teacher Training Department, Valahia University Targoviste. The area of interest is oriented on: educational technologies - e-learning, interaction, and virtual communication, web-based learning platforms, using ICT for educational purposes. He is the author/co-author of over 30 books and book chapters, and over 300 scientific papers in scientific journals indexed in Web of Science / international databases, proceedings of national and international conferences, in the areas of ICT in education, Science education, Modelling and Simulation.

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Prof. Dr. **Jari Lavonen**
University of Helsinki, Finland

Title: LEARNING SCIENCE THROUGH PROJECT-BASED LEARNING: US-FINNISH PARTNERSHIPS FOR INTERNATIONAL RESEARCH AND EDUCATION (PIRE)

Dr. Jari Lavonen is a *Professor of Physics and Chemistry Education* at the University of Helsinki, Finland. He is a director of National Teacher Education Forum and the chair of the Finnish Matriculation Examination Board. He is a visiting professor at the University of Johannesburg. He has been researching science and technology education and teacher education for the last 31 years and his main research interests are science and technology teaching and learning, curriculum development, teacher education and use of ICT in education. He has published altogether 170 refereed scientific papers in journals and books, 140 other articles and 160 books for either science teacher education or for science education. He has been active in international consulting, for example, involving the renewal of teacher education for example in Norway, Peru and South Africa.

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Assoc. Prof. Dr. **Predrag Pale**
University of Zagreb, Croatia

Title: WHICH TEACHERS NEED TO BE REPLACED BY AI

Predrag Pale earned his dipl. ing. (B.Sc.), mr. sc. (M.S.) and dr.sc. (PhD) degrees from Zagreb University, Faculty of Electrical Engineering and Computing.

His current scientific interest and activity are in the fields of ICT in education, user and man-machine interfaces and ICT security.

He is a consultant and designer, educator and lecturer in the fields of information systems and education.

He is one of the main architects of Croatian Academic and Research Network – CARNet at the beginning of the nineties as well as the first national broadband computer network, based on ATM technology at the speeds of 155 and 622 Mbps via optical cables, which connected 12 cities in 1996. He is the co-founder of Central and Eastern European Networking Association – CEENet, the regional association of national academic and research networking organizations.

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Assoc. Prof. Dr. **Tiia Rüttnann**
Tallinn University of Technology, Estonia

Title: ENGINEERING PEDAGOGY AND TEACHERS' COMPETENCIES FOR EFFECTIVE TEACHING STE

Tiia Rüttnann is Associate Professor and Head of Estonian Centre for Engineering Pedagogy at the Department of Mechanical and Industrial Engineering, School of Engineering, Tallinn University of Technology (TalTech), Estonia. She graduated TalTech as Diploma Engineer in the field of Chemical Engineering and Cybernetics in 1982, and received her second MSc in chemical engineering at TalTech in 1992. She defended her PhD in education (with specialization in Engineering Pedagogy) at University of Hradec Králové, Czech Republic in 2007.

She has written several book chapters and published a Handbook on Engineering Pedagogy Science and STEM didactics in 2019.

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